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U. S. DEPARTMENT OF AGRICULTURE

Lespedezas for Quail and Good Land Use

U. S. DEPARTMENT OF AGRICULTURE
Leaflet No. 373

Lespedezas for Quail and Good

By VERNE E. DAVISON, *biologist, Soil Conservation Service*

CONSERVATION OF OUR FARM GAME, such as the bobwhite quail, depends more and more each year on how well farmers and ranchers make full use of all of their land.

Quail are an important agricultural crop. In addition to providing food and recreation, they help the farmer with his other crops by eating weed seeds and injurious insects. Hunting privileges are both a delight and a source of income.

Planting lespedezas on land you can devote to wildlife production can be part of your well-rounded farm-conservation program. Odd areas—such as fence corners—and bare strips between fields and woodland make ideal spots. No other plants give you as good return from small idle areas. Some of the lespedezas make good-quality food for the quail; others furnish cover for them. Since the lespedezas are legumes, which supply their own nitrogen after the first year, they are valuable crops in soil conservation. Many of them provide excellent cover for eroding areas.



Quail are an agricultural crop.

A few decades ago farming methods in the lespedeza range favored the bobwhite quail without any special effort on the part of the farmer. Natural foods and cover were more abundant then than now. We grew more cowpeas and millet. More weed seeds matured—weeds such as sunflowers, ragweed, partridge peas, panic grasses, smartweeds, pokeberries, and pigweeds. And our farms had fewer livestock to compete for the quail-food plants.

Today we manage our land much more intensively—we have fewer weeds, less waste, less idle land. We cut and bale the surplus hay, leaving neither food nor cover. Our crop rotations come in rapid succession—one crop is plowed under to grow another. Winter grains and legumes follow summer row crops but they, too, are plowed in soon after they mature their seeds.

Conservation of bobwhite quail is a problem only landowners can solve. But game commissions and nonlandowning hunters can help wherever they want better hunting. Soil conservation districts now recognize quail management as a farming task. 4–H Clubs, Boy Scouts, Girl Scouts, and other youth groups encourage quail raising as part of their conservation-farming projects.

Land Use



Lespedezas for food and cover

Biologists in the Southeast for years have been examining the crops of quail to find out what they eat. They found that the quail like the seeds of several lespedezas. And fortunately, the sparrows, blackbirds, doves, rats, and mice that destroy most of our grains and other bird foods do not like them.

Some of the lespedezas furnish cover for quail, both from the weather and from their enemies. This cover value is lost, of course, when lespedeza is cut or grazed.

Annual lespedezas have been recognized as good quail food ever since Herbert L. Stoddard made the first bobwhite quail studies in the 1920's. Quail eat the seeds of all the annual lespedezas—Korean, common, and Kobe. Korean lespedeza seeds are better quail food than the others because they are larger and the hulls are thinner. But you can depend on only part of your annual lespedeza acreage for quail food, since grazing and haying remove the seeds, and plowing, of course, covers them.

Native perennial lespedezas were once recommended for quail. Later studies have proved that all 15 of them are among the poorest of quail foods.

Sericea lespedeza makes good cover for quail where it is not cut or grazed. It is the one oriental perennial herb lespedeza that has this value. But seldom are the seeds of sericea, or similar oriental perennials, eaten by quail. For this reason, you can't depend on sericea as a source of quail food.

Shrub lespedezas are becoming well known as a source of food that can be depended on. All the shrub lespedezas are perennials that grow from 4 to 8 feet high and satisfactorily prevent erosion wherever they are planted. But they are too coarse and woody for hay or for cover crops in a field rotation.

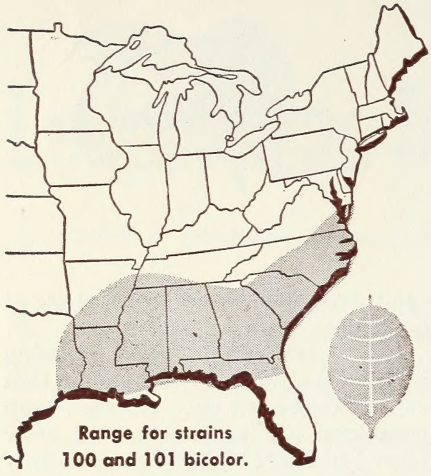
The seeds of the shrub lespedezas are larger than any of the other lespedeza seeds. Another advantage for feed is that quail eat these seeds from the hull. With the other lespedezas they must swallow the hull along with the seed.

The individual lespedezas discussed in detail in this Leaflet are perennial shrub, or bush, lespedezas.



Shrub lespedezas prevent erosion.

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Range for strains 100 and 101 bicolor.

Bicolor lespedeza

Bicolor is now the most common of the shrub lespedezas. Because it has been planted more than the others we know more about its care and its use by bobwhite quail. But ordinary bicolor won't grow in all the quail country. So biologists and plant specialists have been developing other strains. Some extend the range of bicolor (see maps on this page); others make more seeds or hold them better.

Strain 100 bicolor has the same range as ordinary bicolor, but it yields more seeds. Most of them ripen by October 15 and all by November 1. This strain holds some of its seeds to midwinter.

Strain 101 is the most vigorous of all strains, produces the highest seed yields, and holds its seeds longest. But its seeds ripen a few days later. For this reason it can't be used quite so far north as strain 100 and ordinary bicolor.

Natob, another strain of bicolor lespedeza, can be grown farther north because its seeds ripen earlier than those of the other shrub lespedezas. Also, its stems are winter hardy. Natob is the only shrub lespedeza that can be recommended where frost can be expected before September 20. Its seed yield is only moderate (350 pounds or less per acre) in most parts of this recommended area. South of this area, yields are still smaller, and the plants often fail to set seed southward from Virginia, Kentucky, and Missouri. A strain producing more seed is needed.

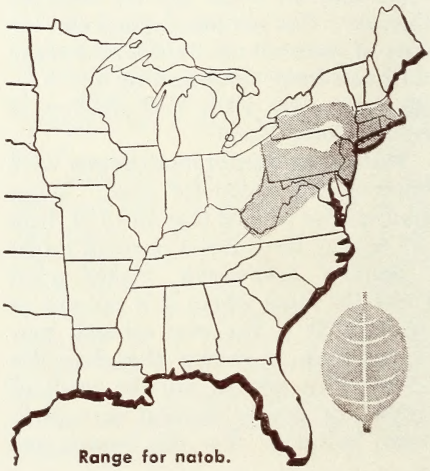
Japonica lespedeza

Selected strains of japonica have now been developed which equal the best bicolor lespedezas in seed yield. Their vigor is satisfactory, and the ripening of their seeds is assured by September 25 in the adapted area.

Another of their good traits is that the woody stems die back to the ground every winter. Thus, you do not have to cut them back to the ground each year or two as you do bicolor in the South. On the other hand, this trait prevents their success farther north because the dying back of the stems delays blooming and ripening from 7 to 10 days.

Other shrub lespedezas

Other shrub lespedezas have been tried but none so far shows much



Range for natob.

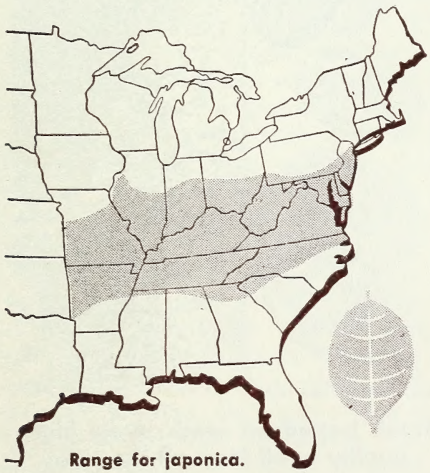
promise. *Lespedeza thunbergii* is a little more vigorous than bicolor, but its seed yield is not so good. *Lespedeza crytobotrya* was found to be a wonderful quail food in some areas, but its seeds drop early in the fall.

Shrub lespedezas in land management for quail

The shrub lespedezas at one time were widely used for gully control. When their value as quail food was discovered, they came into use as an agricultural crop for feeding quail. Once well established, they control erosion and you can keep them vigorous indefinitely with good care.

You can use shrub lespedezas with almost any kind of farming where quail food is short. Quail eat many different kinds of seeds and insects, most of which are available for only part of the year. They require only one good food, however, if they have an adequate amount of that. Never forget the importance of food. Quail need food every day. Most farms and ranches have too little at some time of the year—winter, spring, or fall.

As mentioned before, the seeds of shrub lespedezas are relished by quail but left alone by rodents and nongame



Range for japonica.



Shrub lespedeza is a dependable source of quail food.

birds. This characteristic permits you to feed a covey of quail on a lespedeza strip of about ⅛ acre. Most other quail foods require an acre or so of land for each covey.

Equally important is the fact that many shrub lespedeza seeds remain on the ground for 12 to 24 months. The seeds carried over from the previous fall encourage the coveys to locate on the strips in August, September, and October—before the new crop becomes available. This prevents much of the "fall shuffle" of quail searching for food. Observations show that the seeds accumulate from year to year, and an actual abundance is maintained at all times.

To use shrub lespedezas effectively, you should plan the use of all your land at the same time. These lespedezas can be used on the poorest or the best soils, if they are not wet. They will not stand grazing; cattle and horses like them too well. Deer or pocket-gophers, if numerous, may damage these lespedezas severely. A Soil Conservation Service technician can help you decide where to plant them and where not to.

For best economy, plant shrub les-



Shrub lespedeza as a food strip in woodland.

pedezas as game-food strips on land you don't otherwise use. The border between fields and woodlands, which is commonly bare and eroded, is an example. Other good sites are highway fills, dikes, spoil banks, and "odd areas."

Or, if you want to produce quail on land suitable for other uses, plant food strips on land set aside for the sole use of the birds—open places in the woods, for example. Strips in woods take no more than 1 or 2 percent of the woodland. If the stand of trees is thick, wait until you cut logs or poles—then put the food strip in the open places.

Food strips in open woodland

The following outline tells you how to plant the shrub lespedezas in woodland food strips and what to do to keep them in good condition permanently.

Size.—Approximately ⅛ acre in each strip.

Shape.—300 to 400 feet long, 15 to 20 feet wide, 4 to 6 rows. Rows straight or curved.

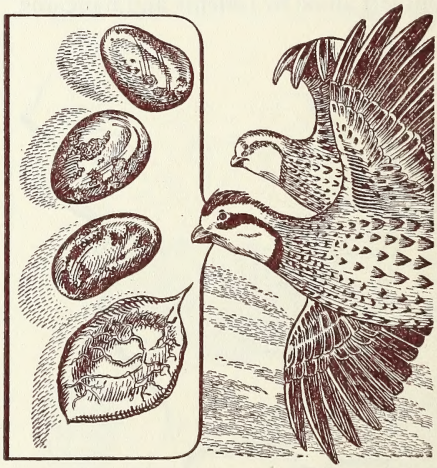
Number.—One strip to each 20 or 25 acres to begin with. If you have a covey of birds for each strip, add more food strips until the food strips exceed the coveys. You can afford up to 2 strips for each covey.

Material.—Each strip requires 1,000 to 1,200 plants, or 2 pounds of scarified seed. You can obtain small amounts free of charge from some soil conservation districts, which are furnished them by the State game departments. Seeds and plants may also be purchased from commercial sources.

Site preparation.—Plow and harrow the area to be planted just as you would for any field crop.

Planting.—Space plants 18 to 24 inches apart in the row. Rows may be 3, 3½, or 4 feet apart. Set plants any time from November to April in the South, the earlier the better. In Central and Northern States, plant a suitable strain as soon as possible after frost is out of the ground. Plant upright in holes or furrows deep enough to accommodate the 6- to 8-inch roots. Cover the plant an inch or two above the root collar, leaving the stem above the ground.

Medium to large nursery-grown 1-year-old seedlings assure good growth and survival, especially when the weather turns unfavorable. Plants are considered small if the diameter



Shrub lespedeza seeds make high-quality quail food all the year.



Establishing a woodland border with lespedeza plants.

(measured an inch or two above the root crown) is below 1/16 inch; medium if 1/16 to 1/4 inch; and large if above 1/4 inch.

Seeding.—Prepare the seedbed well. Use scarified seed. If you plant in rows, place 20 to 30 seeds per foot in shallow furrows spaced as you wish from as little as 12 inches to as much as 3½ feet apart. Cover the seed about ½ inch deep (1 inch in sandy soil). For broadcast planting, be careful to sow evenly over the edges as well as down the center of the strip. A cultipacker is very helpful on broadcast seedings, as a firm seedbed is always best. Seed when the ground moisture is good and soon after the danger of killing frost is past in the spring. Never seed in dry soil.

Fertilizing.—Apply fertilizer before or at the time of planting or seeding. The amount needed depends on the fertility of the land you are planting. A liberal amount (400 to 800 pounds per acre) assures vigorous, rapid growth and high seed production. Like all legumes, lespedeza responds best to potash and phosphates. An 0–12–12 or similar fertilizer is good. A fertilizer with a little nitrogen, such as 3–12–12, is better for sandy soils.

Maintenance.—*To guarantee adequate food for a covey of birds on only 1/8 acre of land, you must take good care of the lespedeza plantings.*

Row plantings should be cultivated two or three times the first year to destroy competing vegetation. Broadcast plantings must be left to struggle through the weeds and grass. No cultivation is needed the second year, or thereafter.

The first year's growth from shrub lespedeza seed, or even plants, may be disappointing. Don't destroy it. The planting will get better the second year—and still better the third. If it lacks pleasing growth the second year or thereafter, fertilize it.

Should it decline in vigor after once making good growth and a good seed crop, fertilize it again, using 400 to 800 pounds per acre of 0–12–12 or similar fertilizer. The fertilizer can be broadcast by hand, without cultivation into the soil, in winter or early spring.

A rotary power-driven mower is a good machine to use for cutting bicolor lespedeza back to the ground in winter.



Seeding a lespedeza border for wildlife between crop and woodland.



An established field border with shrub lespedeza next to the woodland and sericea lespedeza next to the cropland.

Japonica never needs cutting, as it dies back naturally. And cutting back natob delays its ripening date too much. For beauty, ordinary bicolor and strain 101 may be cut down every second or third year. This causes many stems to sprout from the crown.

In Florida, every-year-cutting is best as it delays blooming to fit the rainfall and daylight hours of this climate.

Do not burn or disk the seed into the soil. Your birds will need the seed carried over from the previous year to feed them in September and October, before a new crop falls.

Field and woodland borders

Borders between cropped fields and woodland are planted the same way as woodland food strips. Make the shrub lespedeza border 15 to 20 feet wide. If you need a turnrow and wider protection from erosion, seed sericea in a 12- to 15-foot strip between the shrub lespedeza and cropland. Borders should extend the full length of the woodland-field junction for good land use. The sericea is sown broadcast on top of the ground at a rate of 30 pounds per acre, following thorough land preparation.

These borders are usually more eroded than cropland; therefore, they will need extra fertilizer at the beginning. A severely eroded border will need a mulch of straw, leaves, sawdust, wood chips, or branches to protect the little seedlings through the first year of growth.

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